

Catawissa Bridge  
Spanning the North Branch of the  
Susquehanna River at State Route 42  
Catawissa  
Columbia County  
Pennsylvania

HAER No. PA-90

HAER  
PA,  
19-CAT,  
2-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD  
CATAWISSA BRIDGE

HAER NO. PA-90

HAER  
PA  
19-CAT,  
2-

LOCATION:

The Catawissa Bridge (PA Traffic Route 42 (L.R. 183)) over the North Branch of the Susquehanna River is located approximately 3.5 miles south of Bloomsburg at the Borough of Catawissa in Columbia County, Pennsylvania. The Catawissa Bridge is located on the U.S.G.S. Catawissa Quadrangle Scale: 1:24,000 Map at the following Universal Transverse Mercator Coordinates: E 376,400; N 4,534,500.

PRESENT OWNER:

The Catawissa Bridge is presently owned by the Pennsylvania Department of Transportation, Transportation and Safety Building, Harrisburg, Pennsylvania.

PRESENT USE:

The Catawissa Bridge carries State Traffic Route 42 over the North Branch of the Susquehanna River. It provides direct access to U.S. Route 11, a major north-south highway serving east-central Pennsylvania. The current ADT on the bridge is 5600.

STATEMENT OF SIGNIFICANCE:

The existing Catawissa Bridge, built in 1898 by the Pennsylvania Bridge Company of Beaver Falls, Pennsylvania, consists of four (4) steel through-truss spans, each 304 feet long, for a total length of 1,225 feet. The engineering design of the bridge's modified Camel-back Warren type trusses is not unique in itself but it is significant because of the length of the four (4) trusses and the degree of technology demonstrated at the time of its design and construction. The Catawissa Bridge has one of the longest spans between piers of any Susquehanna River truss bridge remaining in the State of Pennsylvania.

PROJECT INFORMATION STATEMENT:

The Federal Highway Administration and the Pennsylvania Department of Transportation propose to replace the existing Traffic Route 42 (L.R. 183) Bridge over the North Branch of the Susquehanna River at Catawissa, Pennsylvania (Columbia County) with a new structure. The existing through-truss bridge, determined eligible for the National Register of Historic Places, would be demolished as part of the proposed bridge replacement project in accordance with the Memorandum of Agreement on the Catawissa Bridge dated March, 1984.

The Pennsylvania Department of Transportation, in cooperation with the Federal Highway Administration, is the responsible agency for this bridge replacement project and the project is included in the First Four Years of the Pennsylvania Department of Transportation's Twelve Year Program and in Act 235 (Billion Dollar Bridge Program). Federal authority

to undertake the project is found in Title 23 - Chapter 1 of the U.S. Code of Federal Regulations.

HISTORICAL INFORMATION:

The Catawissa Bridge was first built in 1898. In 1905 it became necessary to reconstruct two (2) spans and a pier which were destroyed in a flood in March, 1904. The reconstructed spans were completed and the bridge was reopened on April 12, 1906.

The first owner of record whose title appears on the 1905 plan was the Board of Public Grounds and Buildings of the Commonwealth of Pennsylvania, Harrisburg, Pennsylvania (This Board later became a part of what is now the Department of General Services).

The current owner of the Catawissa Bridge is the Pennsylvania Department of Transportation, Transportation and Safety Building, Harrisburg, Pennsylvania, which assumed ownership on June 1, 1930.

The existing Catawissa Bridge was built in 1898 by the Pennsylvania Bridge Company of Beaver Falls, Pennsylvania and subsequently partially reconstructed in 1905-1906 by the same company.

Although no original plans are available to review, the 1905 drawings and the plans used in the 1937 rehabilitation are available and are included in this report. The trusses of the Catawissa Bridge are 14-panel through-modified Camel-back Warren Truss configuration spans. The panels measure 21-feet, 9-inches center to center, and the bridge width curb to curb measures 18-feet, 6-inches. The original bridge had two (2) 4-foot walkways consisting of 2-inch planks and 3-foot, 9-inch railings. The original bridge deck was constructed of  $\frac{1}{4}$ -inch buckle plate filled with concrete and topped with  $\frac{3}{4}$ -inch of sand and 3-inch Creo-resinated wood blocks or the equivalent. The bridge had a 15-foot vertical clearance over the roadway centerline. Typical truss joints were fastened with different diameter steel pins and built-up members were fastened with rivets. The stone piers were constructed of coarse ashlar masonry and are founded on timber cribbing. The abutments and wing walls were also constructed of coarse ashlar masonry.

By 1902 trolley tracks had been laid on the Catawissa Bridge and the Columbia Montour Electric Railway Company began operating trolley service between Catawissa and Bloomsburg, Pennsylvania.

On March 9, 1904, the two (2) eastern spans and the eastern pier were destroyed by high water and an unusual amount of ice. On March 30, 1905, the original bridge builder, the Pennsylvania Bridge Company of Beaver Falls, Pennsylvania, was given a contract to reconstruct these two spans and pier. The two new spans and pier were completed, and the bridge was reopened on April 12, 1906. Except for the size of some of the structural members, the 1905 trusses, for which the original plans are available, are identical to the 1898 trusses.

In 1937 the existing Catawissa Bridge was rehabilitated. This rehabilitation consisted of replacement of the bridge deck with fabricated steel stringers, removal of the trolley tracks, installation of 3-inch steel floor beams and the relaying of a wood deck. At the same time, the Pennsylvania Power and Light Company installed transmission lines and lights on the existing bridge, and the Bell Telephone Company installed a telephone cable on the existing bridge.

In 1949 the downstream sidewalk was removed from the bridge.

In 1954 the bridge was topped with 1" of FJ-1 Asphalt.

In 1960 the bridge was topped with 1" of FJ-1 Asphalt.

Settlers, particularly Quakers, were present in the Catawissa, Pennsylvania area by the 1770's, and in 1774, Moses Roberts built the first permanent home in what is now Catawissa, Pennsylvania. In 1790, George Knappenberger received the grass lots on either side of Main Street where the bridge now stands, and he and Isaiah Willets established a ferry from this point in the same year. The town soon acquired two stores, a tannery, and new mills on Catawissa Creek. By 1801, there were 45 houses, mostly log-built, in the town, and in 1811, a paper mill was established on the creek, taking over the site of a former grist mill. The next major event in the development of the town was an attempt to build a bridge across the river. Efforts to raise the money began in 1816, but not until the opening of the North Branch Canal on the present Montour Township side of the river in 1831 was sufficient impetus generated to build the bridge. The covered wooden toll bridge was completed and opened to traffic in 1833. Since that time, the bridge at Catawissa, Pennsylvania has periodically been damaged by ice jams and floods. In 1846, five spans were destroyed; these were rebuilt the following year. In March, 1875, the entire structure was destroyed by a flood. A Howe Truss covered bridge was constructed on the old piers and completed in November of the same year. The bridge was made toll-free in 1893. In 1896, a hurricane totally destroyed the Howe Truss structure. A ferry was used to transport people across the river until the existing through-truss bridge was completed in 1898. In March, 1904, two spans and a pier of the bridge were destroyed by a flood and ice. Again, a ferry was used for transportation across the river until the two spans and pier were replaced in 1906. By 1902, trolley tracks had been laid on the bridge. As automobile and truck use increased and changed travel habits, the need for a major rehabilitation became apparent. This included the removal of the trolley tracks and the strengthening of the deck. Twentieth Century industries included a lumber mill, shoe factory, shirt factory and various service trades for the surrounding agricultural community, all dependent on the Catawissa Bridge. Traffic Route 42 (L.R. 183), which crosses the North Branch of the Susquehanna River on the Catawissa Bridge, continues to be the principal north-south route serving Catawissa Borough. It also provides the most direct connection between Shamokin, Frackville and Mount Carmel on the south and

Bloomsburg and Interstate Route 80 on the north. The existing bridge has been declared structurally deficient by the Pennsylvania Department of Transportation and has been included on the Critical Bridge Inventory of those bridges in Pennsylvania in most immediate need of replacement. In 1978, the posted weight limit of the bridge was reduced to seven tons which has resulted in detours of up to twenty-four (24) miles for trucks weighing more than thirteen (13) tons.

The Catawissa Bridge consists of four (4) steel through-truss spans each 304 feet long, for a total length of 1,225 feet. It is significant because of the length of the trusses, its age, and length of spans between piers (among the longest of any Susquehanna River truss bridges in the State of Pennsylvania). The roadway width is 18'-6" curb to curb with a vertical clearance of 15'-0" above the centerline. The upstream 4-foot walkway consists of 2-inch planks and 3-foot, 9-inch railing.

The piers that were built in 1898 are founded on timber cribbing and are constructed of coarse ashlar masonry. The pier (eastern most) that was built in 1905 was founded on concrete to rock and was constructed of coarse ashlar masonry. The abutments and wing walls are founded on concrete to rock and are constructed of coarse ashlar masonry.

The four (4) structural steel pin connected through trusses comprising the existing bridge are 14-panel spans with a modified Camel-back Warren configuration. The panels measure 21'-9" center-to-center. The top chords of the truss are built-up compression members comprising two (2) 15" deep channels with a 22" wide coverplate on the top flanges and laced bars on the bottom flanges. The bottom chords of the truss consist of various size and number of l-bars. Vertical components are built-up laced members consisting of two (2) 8" deep channels. Diagonal compression members (sway bracing) consist of built-up laced members comprising two (2) 15" deep channels. Diagonal tension members consist of rods and turnbuckles. Transverse floor beams at the panel points consist of 30" deep riveted plate girders. Roadway stringers framing into the floor beams are 16" deep l-beams. Horizontal portal members consist of built-up laced channels. In addition, the original bridge consisted of the following: 1) two (2) 4-foot wide walkways, comprised of transverse 2-inch wide planks supported on 10-inch deep l-beams framing into the floor beams at the panel points; 2) a 3'-9" tall hand railing on the outside of the walkways consisting of back-to-back double angles for its top chord, a single angle for a bottom chord, and riveted, latticed crossbars; and 3) a bridge deck consisting of a  $\frac{1}{4}$ -inch buckle plate filled with concrete and

topped with 3/4-inches of sand and 3-inch Creo-resinated wood blocks or the equivalent. The existing bridge has a 4-foot wide walkway and railing on the upstream side only, and the bridge deck now consists of 3-inch steel floor beams topped with a 2-inch asphalt surface.

#### SOURCES OF INFORMATION

##### A. Original Architectural Drawings:

The engineering drawings for the 1898 bridge are not available; however, the 1904 Survey and 1905 Reconstructed Bridge Plans are available. Alterations and additions plans to the bridge are also available for a period from 1936 to 1937. It appears from the 1936-1937 plans that there was little or no change in the structure between 1905 and 1937.

##### B. Bibliography:

Federal Highway Administration and Pennsylvania Department of Transportation. "Draft Environmental Assessment/Draft Section 4(f) Evaluation - Catawissa Bridge Replacement Study." July 28, 1983.

Federal Highway Administration and Pennsylvania Department of Transportation. "Draft Composite Technical Basis Report - Catawissa Bridge Replacement Study." December, 1982.

Federal Highway Administration and Pennsylvania Department of Transportation. "Determination of Eligibility - Route 42 Bridge at Catawissa, Columbia County, Pennsylvania - In Compliance with Section 106, National Historic Preservation Act." October, 1983.

Federal Highway Administration and Pennsylvania Department of Transportation. "Preliminary Case Report - National Historic Preservation Act Section 106, Procedures - Catawissa Bridge Replacement Project, Columbia County, Pennsylvania." October, 1983.

#### LIST OF PREPARERS

FINAL DESIGN CONSULTANT AND PREPARER OF HISTORIC AMERICAN  
ENGINEERING RECORD OF THE CATAWISSA BRIDGE - PARSONS  
BRINCKERHOFF, INC.

Walter J. DeLury, Jr., P.E., Project Highway Engineer, B.S.A.E.,  
M.S.C.E. Highway engineering and project supervision.